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here brought forward are by no means the most reliable. For the hispid pubescence is not always absent upon *B. juncea*, although always much less conspicuous than in *B. Sinapistrum*; the trichomes, when present, being confined to the lower leaves and lower part of the stem. Furthermore, the siliques of *B. Sinapistrum* vary greatly in position, being sometimes subappressed and sometimes widely spreading, so that they are accordingly either erect or very oblique. As to the length of the fruit there is no great difference between the two species, but if a distinction can be made on this feature it would seem that the fruit of *B. Sinapistrum* rather than of *B. juncea* was in general the longer.

On the other hand, several characters furnish very definite and constant differences. In the first place, *B. juncea* is a taller and much paler plant, having a distinctly glaucous stem and more or less glaucescent leaves, while *B. Sinapistrum*, at least as it occurs about Boston, is never glaucous at all. Then in *B. Sinapistrum* the upper leaves are broadest near the rather abruptly contracted base, while in *B. juncea* they are gradually cuneate at the base. But perhaps the most striking difference is in the fruiting pedicels, which in *B. Sinapistrum* are short and thick, being only about 4 or rarely 6^{mm} long, while in *B. juncea* they are much more slender and 6 to 10^{mm} in length. The beak of the fruit in *B. juncea* is slender, subulate, and apparently always empty. In *B. Sinapistrum*, on the other hand, it is rather stout, decidedly ancipital, and commonly contains one seed.

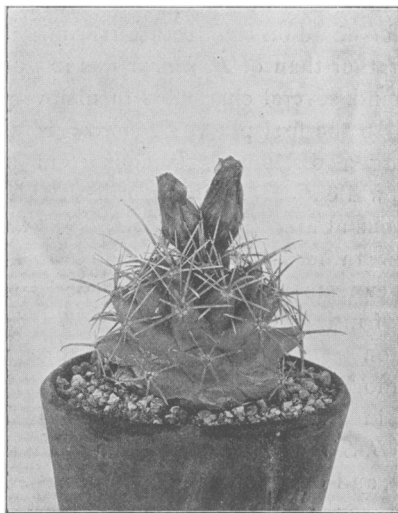
By these characters the plants in question can be readily distinguished, and when once recognized are not likely again to be confused. *B. juncea* seems already to be the commoner species of the two about Boston. Its rapid distribution and establishment in the United States recalls that of *Lactuca Scariola*, or the more recently disseminated *Sisymbrium altissimum*. The best illustration of *B. juncea* is that of Duthie and Fuller in their *Field and Garden Crops of the Northwestern Provinces and Oudh* (plate 41).—B. L. ROBINSON, *Harvard University*.

A NEW MAMILLARIA.

Mamillaria Brownii,¹ n. sp. Glaucous, globose, 5 to 8^{cm} high, simple: tubercles 20 to 28^{mm} long, at first terete but later becoming more or less quadrangular at base, very broad and large, the

¹ This plant will be *Cactus Brownii* to those who prefer the generic name *Cactus*

groove absent in young plants, but extending to the axil of the floriferous tubercle: radial spines 8 to 11, teretish, bulbous at base, spreading, 15 to 20^{mm} long, white or more or less tinted with purple, straight or slightly curved, lower spine and 1 to 3 slender upper ones a little farther back on tubercle than the remaining 7, which are very robust and form an almost perfect circle around the



stout central; central somewhat longer than radials and sometimes slightly flattened on upper side, always solitary and curved or hooked downward; all with horny tips: flowers 5 to 6^{cm} long and spreading to nearly same diameter, opening in bright sunshine and enduring for only a few hours, salmon-yellow: ovary tubular, 20 to 25^{mm} long, with from 4 to 7 minute, caducous scales; fruit and seeds unknown.— Type growing in cactus garden, University of Arizona.

Description drawn from plant collected three years ago by Herbert Brown, in the Baboquabari Mountains, in Southern Arizona, and which now flowers for the first time.

I have named this species for Mr. Herbert Brown, from whom the specimen was obtained. There has been some hesitation as to placing this plant in the genus *Mamillaria* or *Echinocactus*. Together with *Mamillaria macromeris* and *Echinocactus Simpsoni* this plant almost, if

not completely, breaks down all generic differences between these two genera. The prominent tubercles in no definite arrangement and the deep groove extending almost if not quite to the axil would denote it to be a Mamillaria; on the other hand, the exceedingly robust spines and the scales on the ovary are characteristic of the genus *Echinocactus*. It seems, however, to agree more closely with the genus *Mamillaria* as at present understood.—J. W. TOUMEV, *University of Arizona*.

THE DISTRIBUTION OF THE SPECIES OF GYMNO- SPORANGIUM IN THE SOUTH.

It is a somewhat remarkable fact that no less than six very distinct species of *Gymnosporangium* are parasitic on *Juniperus Virginiana*. These species are all found in the states bordering on the Gulf of Mexico, and so far as present data indicate, two of them are peculiar to this region. The other species are of much wider distribution, but we still lack reliable information regarding the extent of range of any of the species of the genus. The species may be arranged in groups as follows:

Producing somewhat globose galls.

Perennial species.

Gymnosporangium globosum Farlow.

Gymnosporangium Bermudianum (Farlow) Earle.

Annual species.

Gymnosporangium macropus Link.

Gymnosporangium sp.¹

Producing slight enlargement of stems or fasciation of branchlets.

Perennial species.

Gymnosporangium clavipes Cooke & Peck.

Gymnosporangium nidus-avis Thaxter.

Of the above species *Gymnosporangium macropus* is the most conspicuous and widely distributed, its roestelia occurring on the wild crab and the cultivated apple. We have also found it during the past year in Alabama growing on *Cratægus spathulata*. Its general distribution is doubtless coextensive with the wide distribution of its host, since its most common alternate host is as widely cultivated. In the

¹ The assignment of a name and description to this species has been left to Dr. Thaxter, to whom the writers are indebted for numerous comparisons of material and verifications of species during the past year.